

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002348

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01P21/00 G01P15/16 B60K41/00 F16H59/48 B60T8/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01P B60K F16H B60T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 013 523 A (TOYOTA MOTOR CO LTD) 28 June 2000 (2000-06-28) paragraphs '0040!', '0041!', '0051!', '0055!', '0056! -----	1,8
A	EP 1 085 312 A (AVL LIST GMBH) 21 March 2001 (2001-03-21) paragraphs '0009! - '0013! figures paragraphs '0021! - '0026! -----	1,8
A	WO 99/46604 A (BOSCH GMBH ROBERT ; HECKMANN HANS (DE); WINNER HERMANN (DE)) 16 September 1999 (1999-09-16) page 2, paragraph 2 - page 4, paragraph 3; figure ----- -/--	1,8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## ° Special categories of cited documents :

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

2 September 2004

Date of mailing of the international search report

13/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Pflugfelder, G

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 43 28 893 A (HITACHI LTD) 10 March 1994 (1994-03-10) page 5, paragraph 2 - page 7, paragraph 2; figure 4 -----	1,8

## INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002348

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1013523	A	28-06-2000	JP 2000177556 A	27-06-2000
			EP 1013523 A2	28-06-2000
			US 6305760 B1	23-10-2001
EP 1085312	A	21-03-2001	AT 3930 U1	25-10-2000
			EP 1085312 A2	21-03-2001
			JP 3390871 B2	31-03-2003
			JP 2001108579 A	20-04-2001
			US 6598467 B1	29-07-2003
WO 9946604	A	16-09-1999	DE 19810213 A1	23-09-1999
			WO 9946604 A1	16-09-1999
			EP 1034433 A1	13-09-2000
			JP 2001526789 T	18-12-2001
			US 6349255 B1	19-02-2002
DE 4328893	A	10-03-1994	JP 6074320 A	15-03-1994
			DE 4328893 A1	10-03-1994
			US 5925087 A	20-07-1999
			JP 3548692 B2	28-07-2004
			JP 11325227 A	26-11-1999
			JP 3126525 B2	22-01-2001
			JP 6147304 A	27-05-1994
			JP 2004108589 A	08-04-2004

# PATENT COOPERATION TREATY

From the INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:  
W.P. THOMPSON & CO.  
Coopers Building  
Church Street  
Liverpool L1 3AB  
UNITED KINGDOM

13 SEP 2004

NOTIFICATION OF TRANSMITTAL OF  
THE INTERNATIONAL SEARCH REPORT AND  
THE WRITTEN OPINION OF THE INTERNATIONAL  
SEARCHING AUTHORITY, OR THE DECLARATION

(PCT Rule 44.1)

Applicant's or agent's file reference RJB/P470039WO	Date of mailing (day/month/year) 13/09/2004
International application No. PCT/GB2004/002348	International filing date (day/month/year) 03/06/2004
Applicant  TOROTRAK (DEVELOPMENT) LIMITED	

4 RESPONSE DUE: 13.11.04

1. ☒ The applicant is hereby notified that the international search report and the written opinion of the International Searching Authority have been established and are transmitted herewith.

**Filing of amendments and statement under Article 19:**

The applicant is entitled, if he so wishes, to amend the claims of the International Application (see Rule 46):

- 4 **When?** The time limit for filing such amendments is normally 2 months from the date of transmittal of the International Search Report; however, for more details, see the notes on the accompanying sheet.

**Where?** Directly to the International Bureau of WIPO, 34 chemin des Colombettes  
1211 Geneva 20, Switzerland, Facsimile No.: (41-22) 740.14.35

**For more detailed instructions,** see the notes on the accompanying sheet.

2. ☐ The applicant is hereby notified that no international search report will be established and that the declaration under Article 17(2)(a) to that effect and the written opinion of the International Searching Authority are transmitted herewith.

3. ☐ **With regard to the protest** against payment of (an) additional fee(s) under Rule 40.2, the applicant is notified that:

- ☐ the protest together with the decision thereon has been transmitted to the International Bureau together with the applicant's request to forward the texts of both the protest and the decision thereon to the designated Offices.  
☐ no decision has been made yet on the protest; the applicant will be notified as soon as a decision is made.

**4. Reminders**


Shortly after the expiration of **18 months** from the priority date, the International application will be published by the International Bureau. If the applicant wishes to avoid or postpone publication, a notice of withdrawal of the international application, or of the priority claim, must reach the International Bureau as provided in Rules 90bis.1 and 90bis.3, respectively, before the completion of the technical preparations for international publication.

The applicant may submit comments on an informal basis on the written opinion of the International Searching Authority to the International Bureau. The International Bureau will send a copy of such comments to all designated Offices unless an international preliminary examination report has been or is to be established. These comments would also be made available to the public but not before the expiration of 30 months from the priority date.

Within **19 months** from the priority date, but only in respect of some designated Offices, a demand for international preliminary examination must be filed if the applicant wishes to postpone the entry into the national phase until **30 months** from the priority date (in some Offices even later); otherwise, the applicant must, **within 20 months** from the priority date, perform the prescribed acts for entry into the national phase before those designated Offices.

In respect of other designated Offices, the time limit of **30 months** (or later) will apply even if no demand is filed within 19 months.

See the Annex to Form PCT/IB/301 and, for details about the applicable time limits, Office by Office, see the *PCT Applicant's Guide*, Volume II, National Chapters and the WIPO Internet site.

Name and mailing address of the International Searching Authority  European Patent Office, P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer  Gregory Adam
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## NOTES TO FORM PCT/ISA/220

These Notes are intended to give the basic instructions concerning the filing of amendments under article 19. The Notes are based on the requirements of the Patent Cooperation Treaty, the Regulations and the Administrative Instructions under that Treaty. In case of discrepancy between these Notes and those requirements, the latter are applicable. For more detailed information, see also the PCT Applicant's Guide, a publication of WIPO.

In these Notes, "Article", "Rule", and "Section" refer to the provisions of the PCT, the PCT Regulations and the PCT Administrative Instructions respectively.

### INSTRUCTIONS CONCERNING AMENDMENTS UNDER ARTICLE 19

The applicant has, after having received the international search report, one opportunity to amend the claims of the international application. It should however be emphasized that, since all parts of the international application (claims, description and drawings) may be amended during the international preliminary examination procedure, there is usually no need to file amendments of the claims under Article 19 except where, e.g. the applicant wants the latter to be published for the purposes of provisional protection or has another reason for amending the claims before international publication. Furthermore, it should be emphasized that provisional protection is available in some States only.

#### What parts of the International application may be amended?

Under Article 19, only the claims may be amended.

During the international phase, the claims may also be amended (or further amended) under Article 34 before the International Preliminary Examining Authority. The description and drawings may only be amended under Article 34 before the International Examining Authority.

Upon entry into the national phase, all parts of the international application may be amended under Article 28 or, where applicable, Article 41.

#### When?

Within 2 months from the date of transmittal of the international search report or 16 months from the priority date, whichever time limit expires later. It should be noted, however, that the amendments will be considered as having been received on time if they are received by the International Bureau after the expiration of the applicable time limit but before the completion of the technical preparations for international publication (Rule 46.1).

#### Where not to file the amendments?

The amendments may only be filed with the International Bureau and not with the receiving Office or the International Searching Authority (Rule 46.2).

Where a demand for international preliminary examination has been/is filed, see below.

#### How?

Either by cancelling one or more entire claims, by adding one or more new claims or by amending the text of one or more of the claims as filed.

A replacement sheet must be submitted for each sheet of the claims which, on account of an amendment or amendments, differs from the sheet originally filed.

All the claims appearing on a replacement sheet must be numbered in Arabic numerals. Where a claim is cancelled, no renumbering of the other claims is required. In all cases where claims are renumbered, they must be renumbered consecutively (Administrative Instructions, Section 205(b)).

The amendments must be made in the language in which the international application is to be published.

#### What documents must/may accompany the amendments?

##### Letter (Section 205(b)):

The amendments must be submitted with a letter.

The letter will not be published with the international application and the amended claims. It should not be confused with the "Statement under Article 19(1)" (see below, under "Statement under Article 19(1)").

The letter must be in English or French, at the choice of the applicant. However, if the language of the international application is English, the letter must be in English; if the language of the international application is French, the letter must be in French.

## NOTES TO FORM PCT/ISA/220 (continued)

The letter must indicate the differences between the claims as filed and the claims as amended. It must, in particular, indicate, in connection with each claim appearing in the international application (it being understood that identical indications concerning several claims may be grouped), whether

- (i) the claim is unchanged;
- (ii) the claim is cancelled;
- (iii) the claim is new;
- (iv) the claim replaces one or more claims as filed;
- (v) the claim is the result of the division of a claim as filed.

**The following examples illustrate the manner in which amendments must be explained in the accompanying letter:**

1. [Where originally there were 48 claims and after amendment of some claims there are 51]:  
"Claims 1 to 29, 31, 32, 34, 35, 37 to 48 replaced by amended claims bearing the same numbers; claims 30, 33 and 36 unchanged; new claims 49 to 51 added."
2. [Where originally there were 15 claims and after amendment of all claims there are 11]:  
"Claims 1 to 15 replaced by amended claims 1 to 11."
3. [Where originally there were 14 claims and the amendments consist in cancelling some claims and in adding new claims]:  
"Claims 1 to 6 and 14 unchanged; claims 7 to 13 cancelled; new claims 15, 16 and 17 added." or  
"Claims 7 to 13 cancelled; new claims 15, 16 and 17 added; all other claims unchanged."
4. [Where various kinds of amendments are made]:  
"Claims 1-10 unchanged; claims 11 to 13, 18 and 19 cancelled; claims 14, 15 and 16 replaced by amended claim 14; claim 17 subdivided into amended claims 15, 16 and 17; new claims 20 and 21 added."

### **"Statement under article 19(1)" (Rule 46.4)**

The amendments may be accompanied by a statement explaining the amendments and indicating any impact that such amendments might have on the description and the drawings (which cannot be amended under Article 19(1)).

The statement will be published with the international application and the amended claims.

**It must be in the language in which the international application is to be published.**

It must be brief, not exceeding 500 words if in English or if translated into English.

It should not be confused with and does not replace the letter indicating the differences between the claims as filed and as amended. It must be filed on a separate sheet and must be identified as such by a heading, preferably by using the words "Statement under Article 19(1)."

It may not contain any disparaging comments on the international search report or the relevance of citations contained in that report. Reference to citations, relevant to a given claim, contained in the international search report may be made only in connection with an amendment of that claim.

### **Consequence if a demand for international preliminary examination has already been filed**

If, at the time of filing any amendments under Article 19, a demand for international preliminary examination has already been submitted, the applicant must preferably, at the same time of filing the amendments with the International Bureau, also file a copy of such amendments with the International Preliminary Examining Authority (see Rule 62.2(a), first sentence).

### **Consequence with regard to translation of the international application for entry into the national phase**

The applicant's attention is drawn to the fact that, where upon entry into the national phase, a translation of the claims as amended under Article 19 may have to be furnished to the designated/elected Offices, instead of, or in addition to, the translation of the claims as filed.

For further details on the requirements of each designated/elected Office, see Volume II of the PCT Applicant's Guide.

## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference RJB/P470039WO	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. PCT/GB2004/002348	International filing date (day/month/year) 03/06/2004	(Earliest) Priority Date (day/month/year) 12/07/2003
Applicant  TOROTRAK (DEVELOPMENT) LIMITED		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 4 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

**1. Basis of the report**

a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☐ With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. ☐ **Certain claims were found unsearchable** (See Box II).

3. ☐ **Unity of invention is lacking** (see Box III).

4. With regard to the **title**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regards to the **drawings**,

a. the figure of the **drawings** to be published with the abstract is Figure No. 1

☐ as suggested by the applicant.

☒ as selected by this Authority, because the applicant failed to suggest a figure.

☐ as selected by this Authority, because this figure better characterizes the invention.

b. ☐ none of the figures is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International Application No

PCT/GB2004/002348

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 G01P21/00 G01P15/16 B60K41/00 F16H59/48 B60T8/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 G01P B60K F16H B60T

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	EP 1 013 523 A (TOYOTA MOTOR CO LTD) 28 June 2000 (2000-06-28) paragraphs '0040!', '0041!', '0051!', '0055!', '0056! -----	1,8
A	EP 1 085 312 A (AVL LIST GMBH) 21 March 2001 (2001-03-21) paragraphs '0009! - '0013! figures paragraphs '0021! - '0026! -----	1,8
A	WO 99/46604 A (BOSCH GMBH ROBERT ; HECKMANN HANS (DE); WINNER HERMANN (DE)) 16 September 1999 (1999-09-16) page 2, paragraph 2 - page 4, paragraph 3; figure ----- -/--	1,8

☒ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

## \* Special categories of cited documents:

\*A\* document defining the general state of the art which is not considered to be of particular relevance

\*E\* earlier document but published on or after the international filing date

\*L\* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

\*O\* document referring to an oral disclosure, use, exhibition or other means

\*P\* document published prior to the international filing date but later than the priority date claimed

\*T\* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

\*X\* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

\*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

\*Z\* document member of the same patent family

Date of the actual completion of the international search

2 September 2004

Date of mailing of the international search report

13/09/2004

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Pflugfelder, G



## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	DE 43 28 893 A (HITACHI LTD) 10 March 1994 (1994-03-10) page 5, paragraph 2 - page 7, paragraph 2; figure 4 -----	1,8

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/GB2004/002348

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
EP 1013523	A	28-06-2000	JP 2000177556 A	27-06-2000
			EP 1013523 A2	28-06-2000
			US 6305760 B1	23-10-2001
EP 1085312	A	21-03-2001	AT 3930 U1	25-10-2000
			EP 1085312 A2	21-03-2001
			JP 3390871 B2	31-03-2003
			JP 2001108579 A	20-04-2001
			US 6598467 B1	29-07-2003
WO 9946604	A	16-09-1999	DE 19810213 A1	23-09-1999
			WO 9946604 A1	16-09-1999
			EP 1034433 A1	13-09-2000
			JP 2001526789 T	18-12-2001
			US 6349255 B1	19-02-2002
DE 4328893	A	10-03-1994	JP 6074320 A	15-03-1994
			DE 4328893 A1	10-03-1994
			US 5925087 A	20-07-1999
			JP 3548692 B2	28-07-2004
			JP 11325227 A	26-11-1999
			JP 3126525 B2	22-01-2001
			JP 6147304 A	27-05-1994
			JP 2004108589 A	08-04-2004

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2004/002348

International filing date (day/month/year)  
03.06.2004

Priority date (day/month/year)  
12.07.2003

International Patent Classification (IPC) or both national classification and IPC  
G01P21/00, G01P15/16, B60K41/00, F16H59/48, B60T8/00

Applicant  
TOROTRAK (DEVELOPMENT) LIMITED

**1. This opinion contains indications relating to the following items:**

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the ISA:



European Patent Office - P.B. 5818 Patentlaan 2  
NL-2280 HV Rijswijk - Pays Bas  
Tel. +31 70 340 - 2040 Tx: 31 651 epo nl  
Fax: +31 70 340 - 3016

Authorized Officer

Pflugfelder, G

Telephone No. +31 70 340-2890



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/002348

---

**Box No. I Basis of the opinion**

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1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/002348

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**Box No. II Priority**

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1. ☒ The following document has not been furnished:
- ☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).
  - ☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).
- Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.
2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.
3. Additional observations, if necessary:

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**Box No. V Reasoned statement under Rule 43*bis*.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

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1. Statement

Novelty (N)	Yes: Claims	1-10
	No: Claims	
Inventive step (IS)	Yes: Claims	1-10
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-10
	No: Claims	

2. Citations and explanations

**see separate sheet**

Re Item V.

The following documents are referred to in this communication:

D1 : EP 1 013 523 A (TOYOTA MOTOR CO LTD) 28 June 2000 (2000-06-28)

D2 : EP 1 085 312 A (AVL LIST GMBH) 21 March 2001 (2001-03-21)

D3 : WO 99/46604 A (BOSCH GMBH ROBERT ; HECKMANN HANS (DE);  
WINNER HERMANN (DE)) 16 September 1999 (1999-09-16)

D4 : DE 43 28 893 A (HITACHI LTD) 10 March 1994 (1994-03-10)

1. Clarity

1.1 The application does not meet the requirements of Article 6 PCT, because claims 1,3,7,8,10 are not clear.

Claims 1,3,8,10 distinguish the two acceleration signals as *being obtained by measurement* and *being obtained "based upon net driving force"*. This gives the impression, that the *net driving force* is obtained without measurement and it is not clear where said force is known from. Furthermore it is not clear, what the vague expression *based upon* means.

1.2 Claims 1,8 refer to *a method / a device for determining acceleration of a motor vehicle*. This designation gives the impression, that a general method/device is disclosed, for measuring vehicle acceleration in all directions and for all purposes (e.g. slip control, traction control, suspension control, crash detection,...).

The description however discloses only the determination of a longitudinal acceleration in the context of vehicle powertrain control. Therefore, the actual independent claims are too broad and are therefore not supported by the description as required by Article 6 PCT.

1.3 Claims 1,8 further leave it open which of the signals is high pass filtered and which of the signals is low pass filtered. The claims therefore **lack the essential feature** (see description: page 1, paragraphs 2-4 and page 4, paragraph 2) that it is the *time lag introduced by the low pass filtered acceleration sensor signal*, that needs to be *corrected by addition of a high pass filtered transmission/brake force based acceleration signal*.

Without these features the adding of two respectively filtered acceleration signals would only consist of the juxtaposition of well known elements which would not be inventive. The claims are thus not clear.

1.4 The method of *high pass filtering* of dependent claim 7 is not clear and also lacks support by the description.

1.5 Some of the features (*..adding the two filtered acceleration signals..*) in the apparatus claim 8 relate to the category method rather than clearly defining the apparatus in terms of structural features. The claim thus lacks clarity (Article 6 PCT).

## 2 Novelty / Inventive step

An opinion on novelty and inventive step can only provisionally be given, as far as the claims can be interpreted regarding the above mentioned lack of clarity.

2.1 Document D1 (see paragraphs [0040],[0041],[0051],[0055],[0056] ), which is considered to represent the most relevant state of the art, discloses (the references in parenthesis applying to this document) a method of determining acceleration of a motor vehicle, said method comprising:

- obtaining a low pass filtered acceleration signal (figure 5, step 151) *by measurement*,
- obtaining a further acceleration signal *based upon net driving force*.

From this, the subject-matter of independent claim 1 differs in that:

- the two filtered acceleration signals are added.

The subject-matter of claim 1 is therefore novel (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as:

To provide an acceleration signal as input signal for a vehicle power train, which signal having improved low frequency noise and time lag properties.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: Document D1 uses the driving force related acceleration signal only to judge **normal functioning** of an acceleration sensor. It does not mention a time lag of the sensor being a problem for its (brake) control purposes. It does not mention a correction of the sensor signal by adding a signal derived from net driving force. It does not mention the use of the acceleration signal as input signal for a vehicle power train.

It appears not obvious for the skilled person, to use a signal based on so many model assumptions as the net drive force to correct a sensor signal for which well established

precise sensors are available.

D2 and D3 (see passages as cited in the search report) make use of added low pass and high pass filtered acceleration signals, but in other contexts and for other purposes. As far as can be said regarding the above mentioned lack of clarity, these documents also do not appear to prejudice novelty or inventive step of clarified claims.

2.2 Apparatus claim 8 as comprising the apparatus features corresponding to the method features of new and inventive claim 1 is also considered to be new and inventive.

2.3 Claims 2-7 resp. claims 9,10 are dependent on claims 1 resp. 8 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

### **3 Industrial applicability**

The claimed invention meets the requirement of industrial applicability of Article 33 (4) PCT.